

**REMARKS**

Applicant respectfully requests reconsideration of this application in view of the foregoing amendments and following remarks.

A. Status of the Claims and Explanation of Amendments

Claims 2-8, 10-13, 15 and 17 are pending. Claims 4, 7 and 8 are canceled without prejudice or disclaimer, and claims 2, 3, 5, 15 and 17 are amended.

Support for these amendments is found throughout the application as originally filed. No new matter is added by these amendments. Entry is respectfully requested.

Claims 2-3, 7-8, 10-13, 15 and 17 were rejected under 35 U.S.C. § 102(e) as being anticipated by Sogard U.S. Patent Application Publication No. 2005-0099611 (“Sogard”). [5/16/07 Office Action, pp. 2-4.] Claims 4-5 were rejected under 35 U.S.C. § 103(a) as being obvious over Sogard in view of Emoto U.S. Patent Application Publication No. 2003-0035088 (“Emoto”). [5/16/07 Office Action, pp. 4-5.] Claim 6 was rejected under 35 U.S.C. § 103(a) as being obvious over Sogard in view of Loopstra U.S. Patent Application Publication No. 2001-0013925 (“Loopstra”). [5/16/07 Office Action, pp. 5-6].

B. Claims 2-3, 5-6, 10-13, 15 and 17 are Patentably Distinct from the Cited References

The rejections of claims 2-3, 5-6, 10-13, 15 and 17 are respectfully traversed. As explained more fully below, the requirements for such a rejection are not met since Sogard does not teach, suggest or disclose the “rear surface” element recited in Applicant’s Claim 2.

Applicant’s Claim 2 recites:

“2. An optical element comprising:

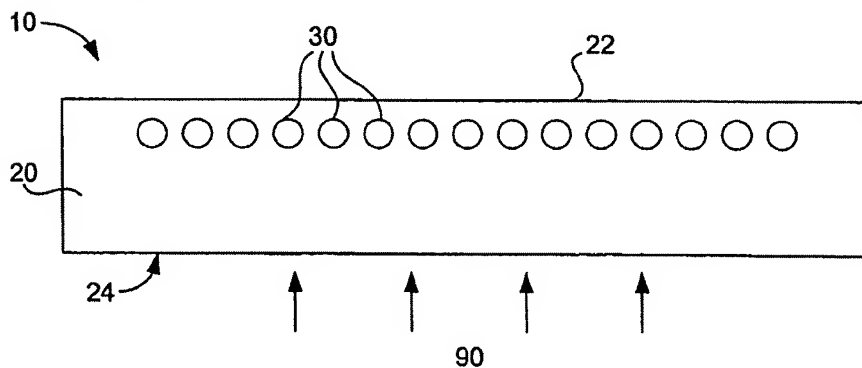
a base having a reflecting surface to be illuminated by light, and a rear surface opposite to the reflecting surface, wherein the rear surface includes a first part defined by a cut-out portion and a second part not defined by a cut-out portion; and

a cooling mechanism for cooling said base through radiation in non-contacted manner, wherein the cooling mechanism includes a radiation plate accommodated by the cut-out portion and a Peltier element that cools the radiation plate.”

Sogard is directed to a mirror with throughholes formed in the body of the mirror, in which coolant pipes are inserted to cool and minimize thermal distortion effects on the mirror.

Referring to Figure 4, which is copied below for reference, Sogard discloses:

“FIG. 4 shows schematically an EUV mirror system **10** embodying this invention, including an EUV mirror **20** with a front surface **22** and a back surface **24**. The front surface **22** is where EUV illumination is intended to impinge. The mirror surface is normally curved and is assumed to possess, at least to a near approximation, axial symmetry. Throughholes (serving as cooling channels) **30** are provided through the mirror **20**, lying in a plane approximately perpendicular to the axis of symmetry.” [Sogard ¶ 0028.]



**FIG. 4**

The Office Action asserts that the Sogard throughholes **30** correspond with the “plural rear surfaces” recited in Applicant’s Claim 2. [5/16/07 Office Action, p. 2.] The Office

Action also asserts that the throughholes correspond to the “cut-out portion [of the rear surface] located opposite to the area on the reflecting surface” recited in Applicant’s now-cancelled Claim 3. [Id., p. 3]

The Sogard throughholes do not teach, suggest or disclose the element of now-amended Claim 2 that recites, “a rear surface opposite to the reflecting surface, wherein the rear surface includes a first part defined by a cut-out portion and a second part not defined by a cut-out portion.” First, the Sogard throughholes are simply not a “rear surface” of the base; they are internal surfaces at best. Indeed, Sogard describes element 24 as the “back surface” of the mirror. [Sogard ¶ 0028] Second, the Sogard throughholes do not include a “second part not defined by a cut-out portion”. As an illustration only, to clear up possible confusion, an example of such a “second part not defined by a cut-out portion” can be seen in Applicant’s FIG. 1A, as the part of the rear surface facing the non-illuminated area **116**.

Thus, Applicant’s Claim 2 is patentably distinct from Sogard because Sogard fails to teach, suggest or disclose the rear surface element recited in Applicant’s claim 2.

In the interest of expediting prosecution of this application, Applicant notes that Claim 2 is also patentably distinct from Oshino et al. U.S. 2004-0051984 A1 (“Oshino”), which is disclosed in the Information Disclosure Statement and 1449 Form submitted herewith. Oshino et al. fails to teach, suggest or disclose the “cooling mechanism” element recited in Applicant’s claim 2, because Oshino does not disclose “the cooling mechanism includes a radiation plate accommodated by the cut-out portion and a Peltier element that cools the radiation plate.” [See Oshino FIGS. 10, 11 and accompanying text].

Accordingly, claim 2 is respectfully submitted to be in condition for allowance for at least the reasons set forth above. For at least similar reasons, independent claims 15 and 17

are patentably distinct from Sogard, and are submitted to be in condition for allowance.

Likewise, Applicant respectfully submits that Claims 3, 5-6, and 10-13, which depend on claim 2 are in condition for allowance as set forth above. However, Applicant reserves the right to address such rejections of the dependent claims in the future as appropriate.

In the interest of expediting prosecution of this patent application, Applicant has chosen to distinguish the cited documents from the pending claims as set forth above. These statements should not be regarded in any way as admissions that the cited documents are, in fact, prior art.

### **CONCLUSION**

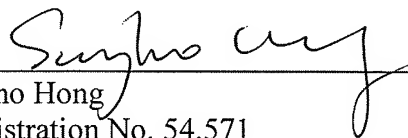
Applicant respectfully submits that all claims as presented herein are in condition for allowance. An early and favorable examination on the merits is respectfully requested. In the event that a telephone conference would facilitate prosecution, the Examiner is invited to contact the undersigned at the number provided.

Applicant believes no fees are required for this Amendment. If, however, an extension of time is necessary to render this filing timely, such is hereby petitioned and the Commissioner is hereby authorized to charge any additional fees which may be required for this paper, or credit any overpayment, to Deposit Account No. 13-4500, Order No. 1232-5283.

Respectfully submitted,  
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